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ABSTRACT

Eleven kindergarten children, nine of whom had been identified at risk, were administered tasks involving word and sentence reading with and without pictures, writing of words and a sentence, print awareness, and book handling skills. Results suggested that children expect words to be a label for pictures, that articles and prepositions are not necessarily written, and that some phonetic relationship is used to write words. When children used decoding strategies, they did so at the expense of meaning. Findings emphasized the importance of avoiding teaching isolated components of reading or letter formation at the expense of a general understanding of the purpose and function of reading and writing. (Author/CL)

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Concepts of Print in Kindergarten "At Risk" Children

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Abstract

Eleven kindergarten children were administered tasks involving word and sentence reading with and without pictures, writing of words and a sentence, print awareness, and book handling skills. Nine of the children had been identified as "at risk" using local DIAL norms as a screening measure. Tasks were administered in September, 1982 and March 1983. Results suggested that children expect words to be a label for pictures, that articles and prepositions are not necessarily written, and that some phonetic relationship is used to write words. When children used decoding strategies, they did so at the expense of meaning.

Concepts of Print in Kindergarten "At Risk" Children

Most reading readiness tests, both individual and group, contain subtests which purport to measure skills related to reading and writing readiness. Children have been held back from formal reading and writing instruction until they have shown adequate mastery of these skills and some children have been labeled learning disabled when they have demonstrated limited progress in attaining these skills. Much of reading research data, however, has not substantiated the validity of many of these skills and how they are integrated into obtaining meaning from the written text. Current research on how children learn about print prior to formal instruction may offer insights into the reading process and be useful in determining where some children now labeled learning disabled either fail to develop or develop in different ways.

Print awareness in pre-school children studies currently underway at the Program in Language and Literacy at the University of Arizona and studies by Ferreiro and Teberosky in Argentina (1982) and now Mexico are demonstrating early reading and writing behavior of pre-school children. Using a Piagetian perspective, Ferreiro has observed the conceptions children have regarding the relationship of print and meaning. She observed a developmental progress from separating drawing from writing and picture from print, through the development of hypotheses about graphemes which vary from the adult perspective, much in the same way conceptualizations involving

conservation tasks do in the preoperational child. Rather than a perceptual problem, children may be demonstrating a conceptual problem-but a good conceptual problem which is necessary for growth.

Arizona studies have noted that children have better understanding of writing than reading and more positive attitudes about writing. The more print aware the children were, the more the understanding of book handling tasks. Understanding the purpose of written language appeared critical.

The Research

The present study observed the reactions to various print awareness tasks by kindergarten children in a small suburban middle class school district in the Southwest. With the exception of two randomly selected average children, the subjects (N = 11) were those who had scored one standard deviation or more below the local mean on the pre-kindergarten screening test (DIAL) in an April or August 1982 testing. During the year, one child was evaluated by a multidisciplinary team and received intervention as a learning disabled student in the resource room, for adaptive physical education, and for speech therapy. All children would be considered "mild" risks.

Subjects

Eleven children served as subjects. Two of the children were a ranomly selected average boy and girl. Thirteen children (8 male) had scored one standard deviation below the local

mean on two or more subtests of the DIAL during the April or August screening out of a total of 82 children entering. Two of the children did not enter at parent request due to general immaturity and the other two children moved. Of the nine "at risk" children in the study, seven were male. Four children had scoredone standard deviation below the mean on the Gross Motor subtest of the DIAL, four on the Fine Motor subtest, six on the Concepts subtest, and three on the Communications subtest. Only one child was below on all four subtests, and this was the child subsequently placed as LD. All of the children were Anglo with the exception of one Filipino. All were English speaking.

Tasks

The children were given the following tasks in September:

1. Word Reading Task (Ferreiro & Teberosky, 1982): Seven cards containing texts with pictures were presented. The text corresponded to either the name of the whole object or parts of the object. The pictures did not always represent the text exactly. The purpose here was to observe which children predicted from the print and which predicted on the picture content. Both cursive and manuscript were used.

Picture	Text
a. a teddy bear	toy (in cursive)
b. cup and saucer	handle (print)
c. tree	fig tree (cirsive)
d. sailboat	sailboat (print)
d. policeman	officer (print)

f. beachball ball (cursive)
g. man smoking a pipe pipe (cursive)

2. Sentence Reading Task: Four cards containing pictures, two of which suggested action, and containing texts of one or two lines were presented.
   a. The ducks swim (cursive)
   b. the little frog went out/for a stroll (cursive)
   c. John fishes in the stream (print)
   d. Paul sails on the river (print)
3. Reading Without Pictures: Sentences are written in front of the children and then read with normal intonation. Only transitive verbs and simple nominative phrases were used: Dad kicks the ball (upper case print), The dog chased the cat. (upper and lower case print), the bear eats honey (print, no spacing), The girl eats a candy (cursive). After the sentence is read to the children, they are asked where they think the words that make up the sentence are. For example, working with"Dad kicks the ball," the children were asked, "Where did I write ball?" The questioning always began with a noun. The inverse was also asked, a part of the text was pointed out and the children were asked what was written there.
4. Writing Task: In the first writing task, three cards were presented, one with a picture only, one with a word only, and one with a word and a picture. The child was asked to point to the correct picture as described by the examiner. In the second task, the

children were asked to write the following words: boy, girl, mother, father, car, house. They were also asked to write this sentence: The small mouse ran into the hole in the wall. If the children said they couldn't write, they were asked to pretend to write.

5. Print Awareness Task: This task consisted of twelve items designed to reveal the children's awareness of contextual, supporting cues. Labels were selected which were common in the environment. The same labels were used for each task. In Task 1, the whole label was presented (for example, the whole front panel from a milk carton). In Task 2, the stylized print and color remained, but stripped of accompanying pictures and designs. In Task 3, all supporting context was removed and the labels were printed in black on 3 x 5 white index cards.

6. Book Handling knowledge Task: This activity was based on Clay's (1975) tasks and used in a study by Goodman and Altwerger (1981) to reveal children's knowledge and use of print in books. This task was administered in March only.

7. A precision measurement probe was used to determine the number of capital letters the child could identify in one minute.

Results

Responses to the Ferriero & Teberosky tasks were catagorized according to their observations:

Level 1-Drawing and writing undifferentiated;

Level 2- Text considered to be a label for pictures;

Level 3-Properties of text provides cues which confirm predictions based on picture.

The reading without pictures task was coded as follows:

Level 1: only nouns are represented;

Level 2: Everything is written except for articles or prepositions;

Level 3: Everything written including articles.

The writing responses are reproduced and will be described according to scribbling, use of letters in the child's name, letter stringing, sound-symbol relationships with consonent names.

The print awareness task was coded as follows: avoidance (also don't know), appropriate, generic, parallel, related concept, function, non-print related, print related, and unrelated.

The book handling tasks are presented as to the percentage of children correctly responding to each question. Unusual or common errors are also described.

Findings for Ferreiro & Teberosky Tasks.

Word Reading and Sentence Reading: Results for these tasks are tabulated in Table 1. With the exception of one child, all children were able to discriminate print from picture fairly consistently. In the September testing, children expected the picture to be the label for the whole picture. In March, two children (one control and one "at risk") were beginning

to use the cues from the print to confirm predictions. These two children also demonstrated the use of sound-symbol relationships on writing and understood that something was written for each oral stimulus, including prepositions and articles.

Reading Without Pictures: In the September screening, five of the seven "at risk" children were at Level 1, indicating that they identified labels for objects as the only thing written. As in the Ferriero study, the children did not appear to view print as an exact reproduction of an oral text, but as the representation of the essential elements. In one child, the whole sentence was attributed to one written segment and the rest of the text was a collection of other sentences which could also be related to the first; for example, A.H. (female) responded as follows to "The dog chased the cat."

"Where did I write dog?"	"Here."-AH pointed to the whole sentence from left to right.
"Where did I write cat?"	"The cat chased the dog here." (pointed to the sentence from right to left.)

AH gave these responses when asked to show where a part of the text was written, but not when a particular part of the text was identified by the examiner and AH was asked what was written there. In the latter case, she labeled nouns and left out articles and verbs. This was also noted for the other children in the study, even those who were at a higher level

in terms of "what is written." When asked to show where a part of the text was written, they usually deleted the article and included it with the noun (the girl for girl or a candy for candy, the ball for ball, chased the for cat). However, when the examiner pointed to a particular part of the text and asked the child to say what was written, the child was more likely to identify the specific article, preposition, or verb. Often, the children would repeat the entire sentence up to that point and would be more likely to establish one-to-one correspondence with each oral and written part.

None of the children was concerned about the lack of spacing in "thebeareatshoney." They all felt it could be read and was all right the way it was. A few commented that it looked "small." The higher level children appeared to give more individual letter responses to this stimulus when asked "what is written here."

Writing Task: Table 2 lists the responses in September and March to the request to write, or pretend to write, words. Levels of development appeared similar to previous studies on invented spelling by Read (1971), Beers & Henderson (1977), and Paul (1976) among others. Spelling appears to be a developmental process. As may be observed in the September response of WC, a child who showed confusion between writing and pictures in other tasks, the act of writing initially appeared directly related to the object itself. Other children demonstrated this behavior to some degree on the sentence writing task (Table 3) where "hole in the wall" was shown as

a larger round circle.

When asked to pretend to write, in September some children would scribble forms similar to cursive writing. While most letters were upper case manuscript (usually letters contained in the child's name), the lower case r, d,b,and i were often used. Initially, sound-symbol relationships were limited and children strung varying lengths of letters to represent the word (or actually the object since father was deemed bigger than mother). This was also true of the sentence writing task, with the length of the utterance represented by a longer letter string.

Futher inspection of productions, especially by TB (control male) in September and several children in March, indicated the use of single letters to represent the sound of the full letter name or whole syllable (vocalic r). Vowels were rarely used, but were usually represented by long vowels whose letter names corresponded closest to the pronounciation of short vowels.

The children appeared sensitive to phonetic relationships, but frequently confused which symbol represented a given sound. This confusion appeared much more so in the "at risk" children than inthe normal population. Most importantly, however, children who could be viewed as lacking readiness skills to begin formal instruction, actually demonstrated similar developmental stages to normal children described in various invented spelling studies. They initially wrote the first letter or phoneme of each word or syllable,

then several went to the next stage (in March) of adding the final phoneme of the word or syllable. For children who did not appear to consider written language to be a replica of oral emission, but an indicator, the writing productions appeared to parallel this conception.

Print Awareness: 33% of the responses to Task 1 in September were considered appropriate to the print. See Table 4. In March, 34% were appropriate. An additional 35% in September and 36% in March of the responses consisted of generic terms such as "soap" for "Ivory" or "toothpaste" or "Crest." Only 9% in September and 3% in March were avoidance responses.

For Task 2, where the background information was reduced, 28% of the responses were considered appropriate in September and 25% in March. Generic responses accounted for 23% in September and 28% in March. In September, 23% of the items on Task 2 were rejected as opposed to 9% on Task 1. However, in March, only 5% were rejected.

On Task 3, in which the children responded to manuscript representations, appropriate responses fell to below 1% in September, but rose to 10% in March. Children called out letter names or tried to "sound out" meaningless sound strings in 24% of the responses in September and in 32% in March. 20% of the responses were unrelated words in September and 33% in March. The children would look around the room and call out names of pictures on the wall, rejecting cues from the print. 51% of the responses were avoidance in September and 16% in

March. In general, the children appeared to be more aware of "sounding out," but at the expense of meaning. They still appeared to be tied to the concept of word-object relationship.

Bookhandling: This task was only administered in March. Ten of the eleven children used the term "book" when asked to identify the book on the table. One child labeled the picture on the cover. All children reported that people "read" books. When they were asked what was inside books, one replied "paper," another "letters," three replied "words," and six replied "pictures." The importance of gaining the major information from pictures rather than the print itself was evident.

All of the children understood front and back and what a page was. When asked to read what was written, only one child said he couldn't read. Four of the children gave letter names or sounds in a meaningless fashion, two gave labels for the pictures, two gave unrelated words, one said "in the beginning," and one child (the average boy) read some of the words.

The children all could indicate where the print was and all but one could show the top and botton of the page appropriately. All but one child could also show where the first word to be read was. Only one child moved his finger from right to left when asked to point to each word as the examiner read. Actually, this child moved his finger from right to left on one line and from left to right on the next. Reviewing this child's resonses to other tasks, he wrote in a reversed fashion as well. This particular child was the one placed in

special services during the year. He had excellent verbal abilities (although his articulation was poor), but he demonstrated deficits in the gross and fine motor areas.

All of the children knew only print could be read and identified when the book was upside down. This is interesting in light of the earlier findings that the children still relied on pictures to give the message.

Confusion appeared when the children were asked to identify a letter or a word. All but one identified letters when asked, but only four showed they could block off a word when asked to do so. Three blocked off letters, and four gave mixed responses such as a letter one time or a part of a word another time. All of the children could point to the first letter of a word when asked and all knew what a capital letter was.

Comprehension revealed a tendency to retrieve only one element from the story. One child used an element to tell his own story. Other responses were also egocentric such as retelling parts of the story with the main character being the child himself. Two children did not respond, even though they demonstrated involvement in the other tasks.

When asked what "by..(author's name)" meant, two children said it was the name of the girl in the story, two thought it meant to buy something, and six didn't know. Only one child (the average boy) identified the name as the "girl who wrote the story."

Conclusions and Implications

The children in this study may not be representative of all children considered " at risk." They do, however, represent those children who are often labeled "immature" or "lacking readiness" in the typical Anglo school population. Frequently these children are retained, put into "transition" rooms, or progress very slowly, if at all, when placed in first grade basal reader programs.

Conceptually, the children appeared to be viewing print as a representation of the oral message, but not necessarily that everything which is said is written. They appeared confused over typical instructional terminology such as "word" or "letter."

Different children gained varying amounts conceptually during the year. One child made giant strides, moving from a confusion between drawing and writing to the understanding that print represents to some degree what is said. One child (SA) who was selected as a control based on high DIAL scores, actually did not demonstrate much growth during the year. Other children grew gradually in their conceptions of print. Pictures still had an important cueing effect for the children, and they expected the print to contain the label. The children also used the stylized print and background for responding to print awareness tasks. Even though they were told that the 3 X 5 cards on Task 3 of print awareness contained the same words they had just identified on Tasks 1 and 2, they

frequently guessed using pictures on the wall. If they did attempt to read, their emphasis on letter names or "sounding out" lost all the meaning previously identified.

As literacy develops, children appear to move from a global identification using pictures, labels, or environmental information to a more specific understanding of print encoding the oral message. This process appears to become more specific, from nouns only, to nouns and verbs without articles or prepositions, to each word. The children's writing productions also appear to move from the general to the specific as well. Too much emphasis on isolated components of reading or letter formation at the expense of a general understanding of the purpose and function of reading and writing could lead to isolated, uncorrelated skills. It is much like teaching rote addition and subtraction facts to children before they have come to an understanding of conservation. They may learn skills, but the whole is lost in an emphasis on the isolated parts.

Table 1

Word and Sentence Reading (Task 1)

Reading Without Pictures (Task 2)

Child	DIAL Concept	Boehm	Pre Task 1	Pre Task 2	Post Task 1	Post Task 2	Letters (60 sec.)
SA*	21	82%	2	2	2	2-3	18
TB*	20	80%	2	2	2-3	3	51
WC	16	**	1	1	2	3	54
JG	18	**	2	2	2	2-3	33
AH	17	58%	2	1	2	2	41
CH	17	78%	2	1-2	2	2-3	30
DJ	17	78%	2	2	1-2	3	50
JJ	17	78%	2	2	2-3	3	55
ML	18	62%	1-2	1	2	2	26
SR	21	42%	2	2	2	2	40
CS***	16	62%	2	1	2	2	17

* Control

** Not Scorable

*** Placed in Special Education

Table 2

Tests of Writing Ability/Concepts

Child	boy	girl	mother	father	car	house	boy	girl	mother	father	car	house	
SA*	NED	Aor	MoM	Dro	oossrr	orhrchs	BDJh	SaBI	MoM	Ddo	Mohear	iKiTIIR	
TB*	boe	erl	MUZ	FOSrD	cr	Hu	Booy	Grl	MUTEH	FOTEHr	cor	HAS	
WC							Boe	Gor	MnR	FeRO	CR	HS	
JH	BnJ	RJY	immy		–	–	BK	KGO	A BeO	AOHM	I GX	WCO	
AH							Bnei	KINeMM	MBCde	VeiMAM	CiMM	FneiN	
CH							BRE	GRR	MRR	FRR	GR	RI	
DJ	BCA	Glo	MVR	FVR	KRO	HSOH	BOG	GRLLi	MUVR	FUVR	CRU	HaZ	
JJ	BOA	ASaSSN	MOMr	GH aSon	KNSOOJ	PENJ	BAE	GEE	MOMMR	FOLR	KOAR	HELS	
ML	Ada	dd)dT	t+ic	PTloy	YX	AM	PIdoK ←	KOGYYI ←	ObYKbTh ←	dPKABE ←	bPKEIT ←	EEYmel ←	
SR	B	GGG	Mo		G	H	BO	OG	MRE	FrE	Kr	HE	
CS**							dYS ←	scB ←	SEB ←	ITB ←	TK ←	LCS ←	

* Control ** Placed in Special Education as LD

Table 3

Sentence Writing

"The small mouse ran into the hole in the wall."

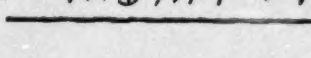
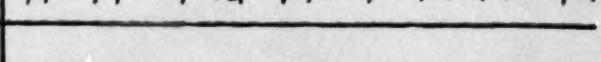
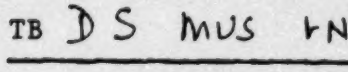
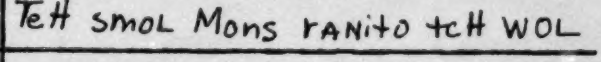
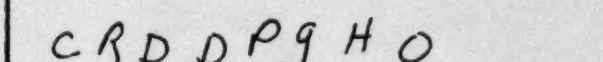
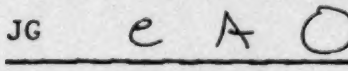
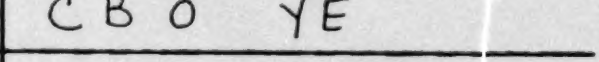
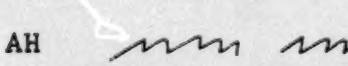
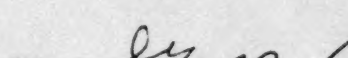
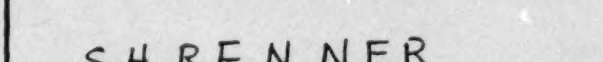
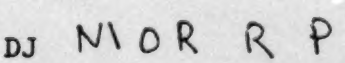
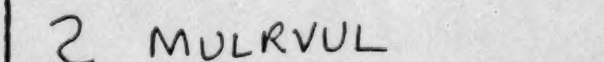
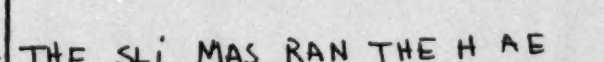
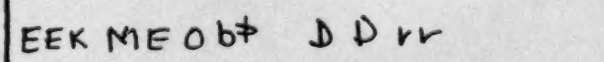
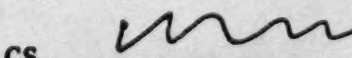
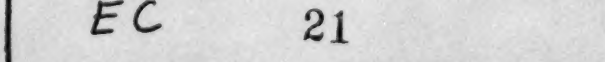
Child	September	March
SA		
TB		
WC		
JG		
AH		
CH		
DJ		
JJ		
ML		
SR		
CS		

Table 4

Child	Task	Avoidance	Appropriate	Generic	Parallel	Related Concept	Function	Non-Print Related	Print Related	Unrelated	Avoid	Appropriate	Generic	Parallel	Related	Function	Non-Print Related	Print Related	Unrelated
SA	1	0	1	5	1	1	2	1	1	0	0	4	3	0	2	0	0	0	3
	2	6	1	1	0	0	2	1	1	0	0	2	2	0	3	0	0	0	5
	3	6	0	3	0	0	0	0	0	3	8	1	1	0	1	0	0	1	0
TB	1	2	4	6	0	0	0	0	0	0	0	6	4	0	1	0	0	1	0
	2	2	5	4	1	0	0	0	0	0	0	7	2	0	1	1	0	1	0
	3	4	0	0	0	0	0	0	8	0	0	2	0	0	0	0	0	10	0
WC	1	3	5	4	0	0	0	0	0	0	1	5	5	0	1	0	0	0	0
	2	5	4	3	0	0	0	0	0	0	1	6	4	0	0	1	0	0	0
	3	12	0	0	0	0	0	0	0	0	7	1	1	0	0	0	0	3	0
JG	1	3	4	3	0	0	2	0	0	0	0	5	5	0	0	1	1	0	0
	2	4	5	3	0	0	0	0	0	0	0	5	6	0	0	0	1	0	0
	3	12	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	6	4
AH	1	0	2	5	0	0	3	0	0	2	0	2	4	0	0	0	4	0	2
	2	0	0	2	0	0	2	1	0	7	0	0	4	0	0	0	1	0	7
	3	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	1	11
DJ	1	2	4	4	0	0	0	0	1	1	0	5	4	0	1	0	0	0	2
	2	6	3	3	0	0	0	0	0	0	1	5	3	0	1	0	0	0	2
	3	9	0	1	0	0	0	0	0	2	7	2	1	0	0	0	0	0	3
JJ	1	0	8	3	0	0	0	0	1	0	0	8	2	1	0	0	0	1	0
	2	0	6	3	0	0	0	0	2	1	0	7	0	1	0	0	0	3	1
	3	6	1	0	0	0	0	0	3	2	0	4	0	0	0	0	0	8	0
ML	1	0	4	4	0	0	3	0	0	1	2	3	6	1	0	0	0	0	0
	2	0	3	3	0	2	0	0	4	0	4	3	4	0	0	0	0	0	1
	3	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	12
SR	1										0	3	9	0	0	0	0	0	0
	2										0	4	7	0	0	0	0	0	1
	3										0	2	1	0	0	0	0	4	5
CS	1										2	2	8	0	0	1	0	0	0
	2										1	3	6	0	0	0	0	0	2
	3										0	1	0	0	0	0	0	1	10

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